

## 7. REFERENCES

- [1] Liebe, H. J. (1985), An updated model for millimeter wave propagation in moist air, *Radio Science* 20, no. 5, 1069-1089.
- [2] Hopponen, J. and H. Liebe (1986), A computational model for the simulation of millimeter-wave propagation through the clear atmosphere, NTIA Report 86-204, October, 32 pp. (NTIS Order No. PB 87-131173/AS).
- [3] Liebe, H. J. (1987), A contribution to modeling atmospheric millimeter-wave properties, *FREQUENZ (Telecom. J.)* 41, no. 1/2, pp. 31-36.
- [4] Read, W., K. Hillig II, E. Cohen, and H. Pickett (1987), The measurement of absolute absorption of millimeter radiation in gases: The absorption of CO and O<sub>2</sub>, *IEEE Transact. Ant. & Propagation*, submitted.
- [5] Liebe, H., V. Wolfe, and D. Howe (1984), Test of wall coatings for controlled moist air experiments, *Rev. Sci. Instr.* 55, no. 10, pp. 1702-1705.
- [6] Liebe, H. J. (1984), The atmospheric water vapor continuum below 300 GHZ, *Int. J. Infrared & Millimeter Waves* 5, pp. 207-227.
- [7] Hinderling, J., M. Sigrist, and F. Kneubuehl (1987), Laser-photoacoustic spectroscopy of water-vapor continuum and line absorption in the 8 to 14  $\mu\text{m}$  atmospheric window, *Infrared Phys.* 27, no. 2, pp. 63-120.
- [8] Suck, S. H., A. E. Wetmore, T. S. Chen, and J. L. Kassner, Jr. (1982), Role of various water clusters in IR absorption in the 8-14- $\mu\text{m}$  window region, *Appl. Opt.* 21, no. 9, pp. 1610-1614.
- [9] Curtiss, L. A., D. J. Frurip, and M. Blander (1979), Studies of molecular association in H<sub>2</sub>O and D<sub>2</sub>O vapors by measurements of thermal conductivity, *J. Chem. Phys.* 71, no. 6, pp. 2703-2711.
- [10] Rosenkranz, P. W. (1987), Interference coefficients for overlapping oxygen lines in air, *J. Quant. Spectr. Radiat. Transfer*, in press.
- [11] Bauer, A., M. Godon, and B. Duterrage (1985), Self- and air-broadened linewidth of the 183 GHZ absorption in water vapor, *J. Quant. Spectr. Radiat. Transfer* 33, no. 2, pp. 167-175.
- [12] Hill, R. J. (1987), Absorption by the tails of the oxygen microwave resonances at atmospheric pressures, *IEEE Transact. Ant. & Propagation AP-35*, no. 2, pp. 198-204.
- [13] Rosenkranz, P. W. (1985, 1987), Pressure broadening of rotational bands. I. A statistical theory, *J. Chem. Phys.* 83, no. 12, pp. 6139-48; II. Water vapor from 300 to 1100 cm<sup>-1</sup>, *J. Chem. Phys.* 87, no. 1, pp. 163-170.
- [14] Liebe, H. J., T. Manabe, and J. P. Stricklen (1987), Millimeter-wave attenuation and delay for a fog event, *IEEE Digest: 12th Int. Conf. Infrared & Millimeter Waves*, Orlando, FL, December.

- [15] Manabe, T., H. J. Liebe, and G. A. Hufford (1987), Complex permittivity of water between 0 and 30 THz, IEEE Digest: 12th Int. Conf. Infrared & Millimeter Waves, Orlando, FL, December.
- [16] Liebe, H. J., and T. A. Dillon (1969), Accurate foreign-gas-broadening parameters of the 22-GHz  $H_2O$  line from refraction spectroscopy, *J. Chem. Phys.* 50, no. 1, pp. 727-732.
- [17] Bauer, A., B. Duterage, and M. Godon (1986), Temperature dependence of water-vapor absorption in the wing of the 183 GHz line, *J. Quant. Spectr. Radiat. Transfer* 36, no. 4, pp. 307-318.
- [18] Liebe, H. J., K. Allen, G. Hand, R. Espeland, and E. Violette (1985), Millimeter-Wave Propagation in Moist Air: Model Versus Path Data, NTIA Report 85-171, March, 62 pp. (NTIS Order No. PB 85-208700).
- [19] Manabe, T., R. O. DeBolt, and H. J. Liebe (1987), Moist air attenuation at 96 GHz over a 21 km line-of-sight path, IEEE Digest: 12th Int. Conf. Infrared & Millimeter Waves, Orlando, FL, December.
- [20] Fedoseev, L. I., and L. M. Koukin (1984), Comparison of the results of summer and winter measurements of atmospheric water vapor absorption at wavelengths 1.5 to 1.55 mm, *Int. J. Infrared and Millimeter Waves* 5, no. 7, pp. 952-964.
- [21] Furashov, N. I., V. Y. Katkov, and V. Y. Ryadov (1984), On the anomalies of submillimeter absorption spectrum of atmospheric water vapor, *Int. J. Infrared and Millimeter Waves* 5, no. 7, pp. 971-981.
- [22] Furashov, N. I., and V. Y. Katkov (1985), Humidity dependence of the atmospheric absorption coefficient in the transparency windows centered and 0.88 and 0.73 mm, *Int. J. Infrared and Millimeter Waves* 6, no. 8, pp. 751-764.
- [23] Buys, J. H., and L. H. Janssen (1981), Comparison of simultaneous atmospheric attenuation measurements at visible light, mid-infrared ( $3-5\mu m$ ) and millimeter waves (94 GHz), *IEE Proc.* 128, Pt. H., no. 3, pp. 131-136.
- [24] Costales, J. B., G. F. Smoot, C. Witebsky, G. DeAmici, and S. D. Friedman (1986), Simultaneous measurements of atmospheric emissions at 10, 33, and 90 GHz, *Radio Science* 21, no. 1, pp. 47-55.
- [25] Kuenzi, K. F., ed. (S. Clough, N. Grody, K. Kuenzi, H. Liebe, A. Neuendorffer, B. Read, P. Rosenkranz, and C. Warner; Contributors) (1987), Report of Microwave Group on ITRA-Intercomparison Campaign Workshop, University of Maryland, 86 pp., March.

